

## **REMARKS**

### **Status of the Claims**

Claims 1 and 6 are amended. No new matter is added.

Claims 1-7 are pending in the application.

### **Claim rejection-35 U.S.C. §102**

Claim 6 is rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,408,095 to Ariga et al. ("Ariga"). Applicants respectfully traverse.

The disclosed invention is directed to a speaker apparatus for use in an automobile where the speaker apparatus comprises an L channel speaker, an R channel speaker, and a center speaker placed between the L channel speaker and the R channel speaker. The center speaker produces a -L channel signal (a signal having a reverse or opposite phase) and a -R channel signal (a signal having a reverse or opposite phase). The L channel speaker, the R channel speaker and the center speaker are placed in front of the driver seat and passenger seat of an automobile.

The vibration axis of the L channel speaker, in the horizontal direction is counterclockwise from the direction of motion of the automobile and in the vertical direction it intersects with and is oriented to reflect sound from the front glass.

The vibration axis of the R channel speaker, in the horizontal direction is clockwise from the direction of motion of the automobile and in the vertical direction it intersects with and is oriented to reflect sound from the front glass.

The horizontal vibration axis of the center speaker is parallel to the direction of



from a woofer. The sound from the woofer of Ariga is used to mask the low frequency sound in the automobile. See Col. 2, lines 19-20. Thus, the signal from the center speaker of Ariga is provided to mask engine noise and other noise associated with normal operation of an automobile. The signal from the center speaker of Ariga is not a signal having a reverse phase of the left and right channels signals which is used to cancel out some of the signal to one ear of a person in an automobile as is disclosed in our application. Amended claim 6 avoids the Ariga reference by reciting that the -L channel signal partially cancels the sound to the right ear of a listener on the left side of the speaker apparatus, and the -R channel signal partially cancels the sound to the left ear of a listener on the right side of the speaker apparatus. Applicants respectfully request the rejection be withdrawn.

**Claim rejection-35 U.S.C. §103**

The rejection of claim 1 under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al., (5,854,847) in view of Carlsson (4,006,311) is traversed. Yoshida discloses an automobile having two side speakers and a central speaker where a delay circuit is coupled to the side speakers so that the sound signals emitted from the side speakers is delayed relative to the sound from the central speaker. In this way the sound from the central speaker is emitted at an earlier time than the sound signals from the side speakers. Referring to Yoshida, col. 4, lines 12-22, "...as a result, for the listeners it seems as if the two side speakers are disposed further away than the central speaker...(and)...for the listeners it seems as if there is only one sound source."(underscoring added). Thus, with Yoshida, the result is that the listener believes that the sound source is coming only from the front of the automobile (see Col. 4, lines 19-22). Yoshida does not disclose speakers having a particular

vertical axis or a particular horizontal axis. Yoshida discloses, in Fig. 2, three speakers mounted in the dash of an automobile. A description as to the orientation of the speakers in the automobile is absent in the description. Carlsson discloses a stereo loudspeaker system intended for home use in a large room having at least one substantially vertical wall.

Claim 1 in the application is amended to avoid the references cited by reciting the structure of an "... L channel speaker and an R channel speaker each having a vertical vibration axis directed at an incline of a prescribed angle in the direction of motion of the automobile to intersect with and direct sound from a front glass of an automobile."

The rejection of claims 2-3 and 5 under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al., (5,854,847) in view of Carlsson (4,006,311) in further view of Ariga et al. (4,408,095) is traversed. Claims 2-3 and 5 depend from independent claim 1. Therefore, claims 2-3 and 5 distinguish over the art cited for at least the same reasons as their base claim.

The rejection of claim 4 under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al., (5,854,847) in view of Carlsson (4,006,311) in further view of Ariga et al. (4,408,095) in further view of Goldfarb (5,764,777) is traversed. Claim 4 depends from claim 2 which depends from independent claim 1. Therefore, claim 4 distinguishes over the art cited for at least the same reasons as the base claim.

Neither Ariga nor Goldfarb, alone or in combination with the other references, teach or suggest the elements noted above and deficient in the other references.

The rejection of claim 6 under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al. (5,854,847) is traversed. Yoshida discloses an automobile having two side speakers and a central speaker where a delay circuit is coupled to the side speakers so that the sound

The rejection of claim 7 under 35 U.S.C. §103(a) as being unpatentable over Yoshida et al. (5,854,847) in view of Carlsson (4,006,311) is traversed. Yoshida does not disclose speakers having a particular vertical axis or a particular horizontal axis. All Yoshida teaches, in Fig. 2, are three speakers mounted in the dash of an automobile. Yoshida provides no description about the orientation of the speakers in the automobile. Carlsson discloses a stereo loudspeaker system intended for home use in a large room having at least one substantially vertical wall. Claim 7 in the application depends from claim 6 and, therefore,

avoids the references cited by reciting that the -L channel signal (the left channel reverse phase signal) partially cancels the sound to the right ear of a listener on the left side of the speaker apparatus, and the -R channel signal (the right channel reverse phase signal) partially cancels the sound to the left ear of a listener on the right side of the speaker apparatus, in combination with the structure of an L channel speaker and an R channel speaker each being pivoted and inclined as defined. In addition, claim 7 depends from independent claim 6. Therefore, claim 7 distinguishes over the art cited for at least the same reasons as the base claim.

**CONCLUSION**

Each and every point raised in the Office Action dated September 19, 2007 has been addressed on the basis of the above amendments and remarks. In view of the above, each of the presently pending claims in this application is believed to be in condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

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Respectfully submitted,

By:   
Louis J. DelJuidice

Registration No.: 47,522  
DARBY & DARBY P.C.  
P.O. Box 770  
Church Street Station  
New York, New York 10008-0770  
(212) 527-7700  
(212) 527-7701 (Fax)  
Attorneys/Agents For Applicant